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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/569,940	11/09/2006	Yoshihisa Saimoto	1003510-000162	3339
21839 7590 09/24/2009 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER ORLANDO, MICHAEL N	
			ART UNIT 1791	PAPER NUMBER
			NOTIFICATION DATE 09/24/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/569,940	<b>Applicant(s)</b> SAIMOTO ET AL.	
	<b>Examiner</b> MICHAEL N. ORLANDO	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/28/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. The specification exceeds the length of 20 pages and is therefore considered lengthy.

### ***Claim Objections***

2. Claims 1, 6 and 7 are objected to because of the following informalities: The claims are awkwardly worded, which makes the method confusing. The claims are drawn to a method of forming a metal film but there is no metal film mentioned in the claim steps. Also, the claims use passive language and do not positively recite method steps. According to the specification the claims are directed to a method which includes applying an adhesive composite film to the front side of a semiconductor so as to protect the front side from damage while the back side is processed and a metal film layer is applied thereon. It does not appear this method is being claimed. Currently the method merely involves the application of an adhesive film to a semiconductor wafer. A suggested method of remedy would be to include a preamble such is as currently present and then to positively recite the method steps in a formatted manner. Claim 1

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contains subject matter in parentheses, it is not clear if such is a part of the claimed invention or not.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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6. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grupen-Shemansky (US 5,268,065), hereinafter Grupen, as evidenced by Matsushiro et al. (US 6,010,919).

Regarding claim 1, Grupen discloses a method of applying a metal film to the backside of a semiconductor wafer and an adhesive composite film to the front side of wafer (abstract; figure 5). The front side protective film comprises a silicone rubber adhesive contact layer, an aluminum interlayer and a polyester back layer (column 3). Aluminum is a metal so it not expected to be permeable to gases. Matsushiro, drawn also to semiconductors, evidences this and shows that thin aluminum layers are substantially gas impermeable (column 10, lines 54-65).

Grupen does not explicitly disclose the front surface as containing circuits, however, such would have been an obvious choice because Grupen discloses that the front surfaces being covered with the protective film have semiconductor **devices** thereon (column 3, lines 10-15). The use of the term devices indicates Grupen appreciates that front wafer surface is not bare, but rather contain electrical components. Given the teachings of Grupen it would have been obvious to utilize the method of Grupen with circuit patterned semiconductors with the motivation of providing protection and limiting damage of such substrates whereby it would have been expectedly successful because Grupen is known for providing protection when devices are on the wafer.

Regarding claim 2, Grupen provides the aluminum layer, polyester layer and silicone rubber layer as indicated above. Aluminum is a metal, which satisfies the

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claimed metal layer. Each of silicone rubber, aluminum and polyester would be expected to provide the claimed gas permeability especially towards larger gases such as carbon dioxide. Also, the claims do not provide specifics as to the temperature. Substances become less permeable as temperature decreases and likewise gases become less active when temperature decreases. Silicone rubber, polyester film and aluminum would each be expected to provide the claimed permeability especially with regard to larger gases such as carbon dioxide when the system is at very low temperatures.

Regarding claim 3, the aluminum layer would not be expected to absorb water and would not permeable to gases.

Regarding claim 4, Grupen indicates that protective layer includes a polyester film (column 3, lines 30-35).

Regarding claims 6 and 7, the merits of the claims have been addressed above.

Regarding claims 8 and 9, the inclusion of the polyester film layer has been discussed above.

7. Claims 5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grupen and Matsushiro, as applied above, and further in view of Saimoto et al. (US 2002/0106868).

Regarding claims 5, 10 and 11, as set forth above Grupen discloses that the adhesive contact layer is the silicone layer. Silicone rubber naturally has an elastic modulus of 1-5Mpa, which would satisfy the claimed modulus. Nonetheless more proof is provided below.

Saimoto, also drawn to semiconductor protecting method via the use of an adhesive film, discloses that in such cases it is preferable that the adhesive portion have an elastic modulus of at least 0.1 MPa ([0010]).

Though the elastic modulus requirements are taken to be inherently satisfied by the teachings of Grupen it would have been obvious nonetheless to utilize an adhesive with such an elastic modulus because it was known that such an elastic modulus leads to better contouring to the surface being protected ([0028]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL N. ORLANDO whose telephone number is (571)270-5038. The examiner can normally be reached on Monday-Thursday, 7:30am-4:30pm, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Philip C. Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MO

/Philip C Tucker/  
Supervisory Patent Examiner, Art Unit 1791